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NOTIONS OF "GENERATION" IN RHETORICAL STUDIES[1]

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A study of the meanings of "generation," a popular term in current rhetorical jargon, reveals important developments in the art and theory of rhetoric. As now used, it refers without clear distinctions to rule-governed, heuristic, and trial-and-error procedures. The rule-governed procedures of transformation grammar are being employed to solve a number of traditional rhetorical problems, most notably in stylistics. A growing interest in heuristics is producing a variety of procedures for solving a broad range of developmental problems hitherto solved by trial-and-error. In the process, the domain of rhetoric is being expanded and redefined. New and important opportunities for research are opening up as a result of these efforts to understand and control cognitive processes.

"Generation" has become a fashionable term in the jargon of rhetoric, largely the result of the growing influence of *generative grammar* in the discipline. Even a cursory survey of recent work in rhetoric reveals generative analyses of style (Ohmann, 1964; 1966), generative rhetorics of the sentence and paragraph (Christensen, 1963a; 1963b; 1965), arguments for the generative nature of perception itself (Stevens, 1967), and even a generative handbook of English (Eschliman, et al., 1966). If we examine how the term is used by different writers, we find that its meaning varies. As used in rhetoric it is not well-defined. For the sake of terminological hygiene, there is some value in isolating its various meanings. There is, however, a more important reason for examining its meanings. Frequently, a term everyone picks up carries a significant insight. Its vogue results from the realization by alert minds that it carries some sort of seminal idea which they proceed to explore, clarify and use in various connections. Its vogue passes once it has become familiar, but the idea and the problems it has created become the new issues of the discipline. "Generation" appears to be such a term, and a study of its meanings leads us into some of the most interesting and important developments in modern rhetoric.

When "generation" is more than a somewhat eulogistic term for production by some unspecified process, it refers either to (a) certain rule-governed

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procedures in generative grammar, or (b) systematic guessing procedures for developing tentative solutions to problems, i.e., heuristic procedures.

A rule-governed procedure specifies a finite series of steps which can be carried out in mechanical fashion without the use of intuition or special ability and, if applied properly, infallibly results in a correct answer; for example, the procedure in arithmetic for finding the least common denominator of a number, and the procedure for making valid inferences in syllogistic reasoning. If we all apply the same rules properly to the same data, we all get the same results. The procedure can be made entirely conscious, each step leading to the next in an unbroken sequence. The process is single-minded and rather simple-minded, something an extremely complex machine can simulate.

A heuristic procedure, on the other hand, provides a series of questions of operations which encourage the intuition of a provisional solution to a problem. It helps us guess effectively. For example, the procedure used by journalists gathering information for a newspaper article--the familiar "Who? What? When? How? and Why?--do not infallibly lead to a well-developed article, but they do make the data-gathering process more efficient and increase the likelihood that the article will be well developed. Although systematic, heuristic search is not purely a conscious and mechanical activity; intuition is indispensible.

Heuristic procedures can be seen as mediating between rule-governed procedures and trial-and-error, a third problem-solving method. Like trial-and-error activity, heuristic activity requires guessing. It is also open-ended, i.e., there is no predetermined number of steps to a solution. In fact it sometimes fails to produce an adequate solution. Like rule-governed activity (and unlike trial-and-error) heuristic activity is systematic. The guesses are not random, for the questions and operations which guide inquiry are stated before hand. The solutions generated by both trial-and-error and heuristic procedures must be verified. There are no predetermined, inevitably correct results. Unlike the results of rule-governed activity, the results of these procedures are unpredictable, often unconventional, sometimes highly original. They are in part the products of what we are as individuals--of our values, attitudes, knowledge, desires, sensitivity and imagination.

The nature of these "generative" methods can be understood better if we attempt to locate them in the process of inquiry. The actual psychological process by which we solve problems is highly complex, non-linear, and

idiosyncratic--in short, rather messy and mysterious. Nevertheless we can develop a simple, abstract description of it which is adequate for our immediate purpose.[2] The process can be seen as beginning with what Dewey called a "felt difficulty," an uneasy feeling about something we have experienced. Following this, an attempt is made first to formulate our uneasiness as a problem and then to explore the data of the problem in quest of a solution. If we are lucky, the mind, after a period of seemingly unconscious activity, intuits a hypothesis. The process ends when the hypothesis is found to be adequate by whatever sets of tests the investigator deems appropriate. The process is undulatory, moving toward a solution through periods of conscious and unconscious activity.

Trial-and-error problem solving is characterized by seemingly random exploration of the problematic data. Although the exploration is guided to some extent by the peculiarities of the problem and the cognitive habits of the investigator, it is, typically, groping and sporadic. Somehow we find a possible lead to a solution, follow it up and if it seems unproductive back off and try another until we reach our goal. Heuristic procedures enable us to explore problematic data more consciously and systematically. Specifically, they help us retrieve relevant information stored in our minds, determine precisely what additional unstored information we must have, and test whether we have explored the data adequately. They also encourage us to examine the data from different perspectives, organizing and reorganizing it in different ways, an activity crucial to effective inquiry since often a solution requires not additional information but a new way of organizing available information. The result of this activity is to give more complete instructions to our unconscious intelligence than normally results from trial-and-error exploration. Heuristic procedures, then, help us systematically coax a hypothesis into being. If they do not guarantee the discovery of adequate hypothesis, they at least increase our chances.

The process of inquiry differs from the process of solving problems with rule-governed procedures, for in the latter no intuitive leaps or tentative solutions occur. Rule-governed procedures may, however, be embedded in various stages of the process of inquiry: for example, mathematical computations when one is trying to discover a new formula for solving a class of mathematical problems.

Rule-governed procedures in rhetoric are not new; logic, with its rigid rules of inference, has always occupied an important place in the discipline.

But now algorithm-like procedures are being introduced from a different source. Although numerous uses of transformation grammar have been proposed, the most interesting is Richard Ohmann's suggestion that it can enable us to deal more precisely with one of the basic concerns of rhetorical theory and criticism--stylistics. Transformation grammar can help us arrive at a more clearly focused concept of style and a precise method for analyzing one aspect of a particular writer's style:

> There is at least some reason...to hold that a style is in part a characteristic way of deploying the transformational apparatus of a language, and to expect that transformational analysis will be a valuable aid to the description of actual styles (1964, p. 431).

His method is significant not only because it offers us a way of analyzing style, we can already analyze styles elaborately and ingeniously, but because it can be duplicated, and conventional analyses (the products of trial-and-error activity and highly trained intuitions) cannot. If we all apply the same rules to the same data, we all get the same results.

At least certain parts of a stylistic analysis can be duplicated. A complete analysis requires aesthetic and non-linguistic judgments as well as careful description. Ohmann offers essentially a means to careful description. His approach does not eliminate the need for less precise, conventional procedures; it is rather a supplement to and a check on conventional methods--an instance of rule-governed activity embedded in the process of inquiry. It does not by itself produce critical hypotheses. It does aid in discovering them by isolating and rigorously describing certain regularities in a writer's style which can be valuable in developing and testing hypotheses.

Furthermore, Ohmann argues (1966) that transformation grammar offers a tool for systematically probing the stylistic intuitions of the writer which lie behind the written work and those of the reader as the work sifts through his mind. Although his discussion is unclear about the relation of transformational rules to psychological processes, it seems to me that the model is best treated as a functional equivalent to something we have in our heads; we behave <u>as if</u> the model were actually stored in our heads, although it may not be, at least in that form. The relation of the model to our capacity to use and understand language is roughly analogous to the relation of aerodynamic laws to a flying insect. The laws are not embedded as such in the insect's head; but they do offer a partial explanation of what the insect does. Our grammatical knowledge may not be stored in rule form, but transformation grammar can, nevertheless, aid in the study of how we use this knowledge.

Although I have cited only one especially interesting example, it is apparent that transformation grammar can make significant contributions to rhetorical studies, particularly in the analysis of discourse. The overriding concern of the rhetorician, however, is with that enormously complex process which terminates in an effective discourse--with the understanding how to do it rather than analyzing what has been done.

Certain kinds of problems either do not lend themselves or have not yet lent themselves to solution by rule-governed procedures. We have algorithms for solving arithmetic problems but no rules for solving loosely defined problems such as "when is civil disobedience justified?" or "why are there no green mammals?" The problems of communication appear to be of this latter sort. Although not easily separable in practice, three broad categories of problems can be distinguished which together define the art of rhetoric: (a) pre-writing problems arising from the would-be writer's experience in the world; (b) problems of audience identification; and (c) problems of expanding generalizations into a discourse which embodies the writer's message in such a way that it will induce changes in the audience's mind. The completed discourse can itself be seen as a tentative solution to a communication problem. This solution is not reached, however, by a simple linear process. It is rather the product of complex sets of interlocking problems and solutions--of conceptual or pre-writing problems, problems of audience, and problems of discourse development.

Today the trial-and-error method is generally used to solve writing problems. It characterizes the efforts of both the experienced writer and the beginner as they move toward a finished discourse. And it provides the rationale for the instructional techniques in our composition courses. Typically, the teacher gives the student an assignment which loosely describes the completed discourse, either by asking a question which the discourse answers or by specifying some of its features (a definition of, an essay on the subject of, an essay in imitation of, or some combination of structural, semantic, and phonological constraints). In addition to a loose specification of the terminal product, the input is sometimes specified as well (e.g., after reading X's article, write a 1000 word critical review). False leads filling his wastebasket, the student somehow develops solutions to the web of rhetorical problems, finally producing something which meets the specifications of the assignment. He then submits his work for comment (an attempt at verification) and revises it if unsatisfactory. He tries, errs, and tries again until the instructor feels the work meets the

assignment. By repeatedly making mistakes and learning from them he solves his problems, and in the process develops, hopefully, that complex set of intuitive habits characteristic of the skilled writer.

The method is product oriented rather than process oriented. The essential features of the product are specified in advance, but little is said about the sequences of operations which result in the product. How one moves from the initial to the terminal state is for the most part undefined.

It would be wrong to say that this method is inappropriate or unproductive. The loosely specified product and the absence of any attempt to control the process by a sequence of precise operations implies, quite correctly, that rhetorical problems belong to a class which may have several acceptable answers. There is no single correct essay which meets the assignment; many reasonable solutions are possible. Furthermore, the method allows the writer to bring into play all his intuitive capacities, special knowledge, and values. Although nothing in the method stimulates imaginative and original work, it at least permits it. Undoubtedly many people learn to write with this method; most of us did (with or without the help of a teacher), and many of our students do.

But it has serious limitations. To be effective it requires a considerable amount of time--surely more than the one or two semesters allotted by optimistic administrators and curriculum planners. It also requires the patience of a cow. In short, the method is inefficient and often frustrating to both student and teacher. Perhaps this is why students, and frequently teachers, believe that only those with natural talent can ever become good writers; and as most students will tell us, they have no talent.

Particularly significant for both writer and teacher is the growing interest in heuristic procedures for solving communication problems. Such procedures are now available for solving the entire range of writing problems, and others are being developed. The advantage of such procedures over the trial-and-error method is that, while retaining the desirable features of the current approach, they enable the writer to achieve greater control over the problem-solving process, thereby making it less frustrating, more efficient, and I have found, often much more interesting.

Procedures for expanding generalizations into a well-developed discourse include the "topics" of classical rhetoric which are appearing as such with increasing frequency in our texts: Karl Wallace's method based on categories of value (1963), and Francis Christensen's "Generative rhetoric of the

sentence" (1963) and "Generative rhetoric of the paragraph" (1965). The list is not meant to be exhaustive, merely illustrative. An extensive survey of work in rhetorical heuristics can be found in Sister Janice Marie Lauer's Invention in contemporary rhetoric (1967). Comparatively little work has been done on audience analysis, but the classical procedure based on successive categorization of the audience still survives in many speech texts. And David Berlo has suggested new approaches based on work in social psychology--particularly empathy, role-playing, and analysis of social systems (1961). Although he does not specify sets of questions or sequences of operations, useful ones can be easily derived from his descriptions.

Perhaps the most interesting procedures being developed are those which help the writer explore problems in the pre-writing stage of composition. "Most interesting" because such procedures have not traditionally been a part of rhetoric. The topics of classical invention provide a method for retrieving what was already known in support of pre-existing generalizations; the new procedures, on the other hand, provide methods for transforming problematic data into meaningful experience. They help us discover generalizations. In developing such procedures we appear to be redefining the domain of rhetoric itself and readjusting the relations between rhetoric and other disciplines. An impressive example is Rohman and Wlecke's Pre-writing: The construction and application of models of concept formation in writing (1964), which describes a simple and teachable procedure based on analogical thought, principles derived from religious meditation, and journal writing. Another, Kenneth Burke's dramatistic method (1945), employing the pentad of act, scene, agent, agency, and purpose, provides a means for exploring human behavior. S. I. Hayakawa (1963) and Kenneth Keyes (1950) offer still another procedure based on the principles of General Semantics.

Methods for solving the first two kinds of problems--those of development and audience--have commonly been taught without reference to particular subject matter or audiences, the assumption being that the methods are useful no matter what the subject or who the audience. Now we are beginning to develop heuristic procedures for discovering hypotheses which give meaning to problematic perceptions, and the underlying assumption seems to be similar: certain kinds of cognitive activity are relevant to all inquiry, no matter what the data is. This is an important assumption for the rhetorician not only because it must lead to a readjustment of the relations between rhetoric and the other disciplines

but because it leads him into some of the most difficult and interesting problems of epistemology and cognitive psychology. Opportunities for significant research are beginning to emerge as we attempt to develop heuristic models appropriate for all stages of the rhetorical process, particularly for the pre-writing stage, for it is here that we confront basic cognitive processes most directly.

Kenneth Pike, Alton Becker and I are in the process of developing a heuristic model based on tagmemic discovery procedures. It is designed to guide the perceptual ability of the investigator by means of a sequence of well-defined, complementary perspectives and a set of epistemological assumptions. Descriptions and applications of the model can be found in Pike's "Beyond the sentence" (1964a) and "Language--where science and poetry meet" (1965). One notable feature of the model is that it is not data conditioned as are, for example, Christensen's models or the ones used for audience analysis; it is applicable to all kinds of problems. This is a clear advantage to both teacher and writer since only one procedure need be learned, rather than one for each kind of problem. Although the tagmemic model is more complex than most of the others and is somewhat more difficult to master, its range of applicability makes it economical in the long run.

The tagmemic model has been used to solve a wide range of pre-writing problems. Alan Howes' "A linguistic analogy in literary criticism" (1964) and the previously mentioned articles by Pike apply the model to literary data. It has also been used successfully with other kinds of data; Philip Bock, for example, has used it to analyze anthropological data (1962), and Becker's articles on the paragraph (1965; 1966) illustrate its application in the analysis of high-level linguistic structures. At the moment the possibility of using it in the training of psycho-therapists is being studied at the University of Michigan.

In addition, the model can be used during the later stages of composition in the development of the discourse itself; both Pike's "Linguistic contribution to the teaching of composition" (1964b) and Hubert English's "Linguistic theory as an aid to invention" (1964) discuss this application. Here it has the same function as the topics of classical rhetoric or the "narrative topics" of journalism: to enable the writer to systematically retrieve information relevant to his thesis and to discover where his knowledge is incomplete. Least developed is the model's application to audience analysis, although what has been

done thus far suggests that there are no impediments using it in this way (Pike, 1961; Young, 1965; Young & Becker, 1965).

Objections to heuristic procedures on the grounds that they frustrate rather than facilitate efficient and original problem-solving seem to arise from misunderstanding what they are and how to use them. They will not work if they are treated as recipes to be applied mechanically; effective use requires intuitive activity and a willingness to speculate. One reason for the decline of classical invention appears to have been an overly mechanical use of the topics; they were treated more like rule-governed procedures than heuristic procedures. My own experiences in teaching heuristic methods in literature and rhetoric courses has convinced me that effective use requires radical changes in pedagogy. The formal and psychologically comfortable atmosphere of the typical classroom, with the teacher dispensing and the student receiving, is not well suited to developing skill in inquiry. Loosening up conventional attitudes and procedures is not enough. To be effective, classroom procedures must create the conditions necessary for original inquiry and reflect the dynamics of the process itself. For example, satisfactory solutions to complex problems are discovered by cycling through increasingly intelligent mistakes; but no student will accept the risks of speculation and the uncertainties of original thought if he fears punishment for failure. Although old habits die hard, I have had to become much more tolerant of error, welcoming mistakes as necessary stages in the process of inquiry and learning to use them as opportunities for instruction.

The current vogue of "generation" in rhetorical studies suggests a shift in interest from the products of cognitive processes to the processes themselves, from what is generated to the act of generation. More particularly, it suggests a desire to achieve a greater understanding of, and control over processes which are largely unconscious and intuitive. Rhetoric of course has had a long standing interest in certain kinds of generative activity, but work in other disciplines has recently begun to expand this interest. Chomsky's generative grammar with its strong psychological bias, for example, and Pike's extremely effective discovering procedures, the work of cognitive psychologists like Jerome Bruner and George Miller and of information theorists like H. A. Simon, G. Polya's pioneering work in mathematical heuristics--all are beginning to have an impact on rhetorical theory.

Especially important to the development of a modern rhetoric is our growing interest in heuristics. The work already done suggests that the ancient art of invention is re-establishing itself as a significant part of the discipline, but with a broader scope, a firmer theoretical base, and more adequate methods. As we explore the nature and uses of generative procedures, new problems and new opportunities for research in rhetoric and pedagogy are gradually emerging. Whether they will become the new issues of the discipline remains to be seen.

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Becker, A. L. A tagmemic approach to paragraph analysis. College Composition and Communication, 1965, 16, 237-242.

Becker, A. L. Symposium on the paragraph. College Composition and Communication, 1966, 17, 67-72.

Berlo, D. The process of communication. New York: Holt, Rinehart and Winston, 1961.

Bock, P. K. The social structure of a Canadian Indian reserve. Unpublished doctoral dissertation, Harvard University, 1962.

Burke, K. A grammar of motives. New York: Prentice-Hall, 1945.

Christensen, F. A generative rhetoric of the sentence. College Composition and Communication, 1963, 14, 155-161. (a)

Christensen, F. Notes toward a new rhetoric. College English, 1963, 25, 7-18. (b)

Christensen, F. A generative rhetoric of the paragraph. College Composition and Communication, 1965, 16, 144-156.

English, H. M. Linguistic theory as an aid to invention. College Composition and Communication, 1964, 15, 136-140.

Eschliman, H. R., Jones, R. C., & Burkett, T. R. Generative English handbook. Belmont, California: Wadsworth Publishing Co., 1966.

Hayakawa, S. I. Language in thought and action. (2nd ed.) New York: Harcourt, Brace and World, 1963.

Howes, A. A linguistic analogy in literary criticism. College Composition and Communication, 1964, 15, 141-144.

Keyes, K. S., Jr. How to develop your thinking ability. New York: McGraw-Hill, 1950.

Lauer, J. M. Invention in contemporary rhetoric: Heuristic procedures. Unpublished doctoral dissertation, University of Michigan, 1967.

Ohmann, R. Generative grammars and the concept of literary style. Word, 1964, 20, 423-439.

Ohmann, R. Literature as sentences. College English, 1966, 27, 261-267.

Pike, K. L. Stimulating and resisting change. Practical Anthropology, 1961, 8, 267-274.

Pike, K. L. Beyond the sentence. College Composition and Communication, 1964, 15, 129-135. (a)

Pike, K. L. A linguistic contribution to the teaching of composition. College Composition and Communication, 1964, 15, 82-88. (b)

Pike, K. L. Language--where science and poetry meet. College English, 1965, 26, 283-292.

OE-BR

Rohman, D. G., & Wlecke, A. O. Pre-Writing: The construction and application of models for concept formation in writing. Cooperative Research Project No.2174, Cooperative Research Program of the Office of Education, U.S. Department of Health, Education and Welfare, 1964.

Stevens, D. R. Concerning "generative" rhetoric. College Composition and Communication, 1967, 18, 173-177.

Wallace, K. R. The substance of rhetoric: Good reasons. The Quarterly Journal of Speech, 1963, 49, 239-249.

Young, R. E. A tagmemic approach to audience analysis. Paper presented at the National Council of Teachers of English Meeting, Boston, November, 1965.

Young, R. E., & Becker, A. L. Toward a modern theory of rhetoric: A tagmemic contribution. Harvard Educational Review, 1965, 35, 450-468.

Footnotes

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[2]The description is a modification of G. Wallas's model (The Art of Thought. New York: Harcourt, Brace, 1926).